District 1 Fire Station
Concord Road
MEP Condition Report
&
Cost Estimate

Town of Acton

Acton Center, Massachusetts

September 30, 2004

G&M Project No. 5333

GANTEAUME & McMULLEN
Architects & Engineers

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Architects & Engineers

Introduction

The Town of Acton has requested that Ganteaume &McMullen review the mechanical, electrical and plumbing (MEP) systems of the District 1 Fire Station and provide an estimate cost for all recommendations. This building is in the Acton Center Historic District, which could impact renovation plans.

This facility was previously reviewed by Butler Bennett Architects and WV Engineering Associates in September 5, 2001 which described general building conditions and recommendations with no cost estimates.

The Public Safety Facility, which will house Dispatch and Fire Administration, is now under construction and will be completed in 2005. A new North Acton District Fire Station is called for in the Long Term Capital Plan for 2008. When that facility is completed, the new space created will be used as "swing space" to relocate staff and apparatus, so that renovations can be performed in unoccupied facilities.

The issue of handicap accessibility to the living quarters on the second floor should be examined, as the time for renovation approaches. Earlier contacts by the Town of Acton with the Massachusetts Architectural Access Board seemed to indicate that HP access to the living quarters, occupied by staff required by job description to be able bodies, would not be required. This presumption should be verified.

Executive Summary

District 1 Fire Station building has been well maintained. The current concerns with the station can be contributed to the age of the building and condition of the support systems.

The main complaints have been:

1. Too cold in the winter, difficult to control temperature in individual rooms.
2. Too hot in the summer, spot cooling by window units. AC units have limited temperature control and are noisy when sleeping.
3. Inadequate ventilation in the apparatus bay, diesel fume smell on second floor.
4. Inadequate ventilation for mechanical room, bathroom and kitchen.
5. Plumbing fixtures original 1950's, difficult to clean.
6. No sprinkler protection.
7. Electrical distribution panels original 1950's, inadequate working clearances.
8. Inadequate fire detection and alarm system.
9. Inadequate number of outlets. Must use a large number of extension cords.
10. No security system

Founded in 1909
Incorporated in 1960

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11. Inadequate tel/data and cable TV systems, exposed wiring,.

Based upon the above stated existing conditions and the recommended repairs / renovations indicated in the body of this report, the following represent the estimated project costs, expressed in current (August 2004) dollars:

COST SUMMARY			SQFT = 4,643	
DESCRIPTION			SUBTOTAL COST	COST/SQFT
M	HVAC		$95,500	$20.57
P	PLUMBING		$56,550	$12.18
FP	FIRE PROTECTION		$20,000	$4.31
E	ELECTRICAL		$197,991	$42.64
A	ARCHITECTURAL		$141,659	$30.51
SUBTOTAL - SUBCONTRACTORS			$511,700	$110.21
GR	GENERAL REQUIREMENTS	10% SUBTOTAL	$51,170	$11.02
CF	CONTRACTORS FEE	10% SUBTOTAL	$56,287	$12.12
DF	DESIGN FEE	12% SUBTOTAL	$74,299	$16.00
C	CONTINGENCY	10% SUBTOTAL	$69,346	$14.94
TOTAL ESTIMATED CONSTRUCTION COST (AUGUST 2004)			$762,801	$164.29
Note: The above estimated construction costs reflect current August, 2004 pricing and are based upon conceptual square foot values and sizing without the benefit of formal design. Currently, it is recommended that a normal escalation factor of 12.5% (exclusive of material spikes) be applied to the Total Current Estimated Cost to reflect construction in mid 2007.				
TOTAL ESTIMATED CONSTRUCTION COST (JUNE 2007)			$858,152	$184.83

General Building Description

The Town of Acton, District 1 Fire Station, on Concord Road is a 4,643 gross square foot, two story masonry building built in the early 1950's and is located in close proximity to Acton Town Hall.

The building has a conventional wood framed hip roof covered with asphalt shingles above second story building area and flat roof covered with EPDM above single story area. The front of the building has three 12'-0" roll-up doors for access to the Apparatus Bay and six 4'-0" windows at the second floor. The rear overhead door is a recently installed insulated metal door. The building exterior walls are concrete block with the brick veneer and covered with painted plaster stucco surface. Steel fire escape located on the south side of the building and wooden walkway located on the lower roof provide additional access to the second floor.

The ceilings throughout the building are metal lath and plaster. The interior wall partitions are wood studs with gypsum wallboard. The attic space of the hip roof area is accessible by a pull down ladder. Building is not ADA accessible.

The first floor space (2,438 square feet or 53'-0" x 46'-0") is divided in to Apparatus Bay, Mechanical Room, Watch Room and Interior Stairwell.

The Apparatus Bay has one double length drive-thru bay, two dead end bays, open work shop, storage area and open storage on all walls.

Mechanical Room has a gas boiler, toilet, air horn compressor and tanks, gas water heater, back-up power 15kW gas fired generator.

Watch Room has the alarm panel, desk for paperwork, base station radio, EMS blood pressure station.

The interior stairwell to the second floor (9'-0" x 34'-0") is on the building's west side. Under stairs closet houses the electrical main service including panels, meter, disconnect switches and storage space.

Second floor is separated in to Day Room, Bunk Rooms, Kitchen, Bath/Shower Room, Study Room and Toilet Room.

The Day Room consists of lounge sitting, TV, table with chairs, two computer stations and a vending machine.

Bunk Room has 4 beds and lockers.

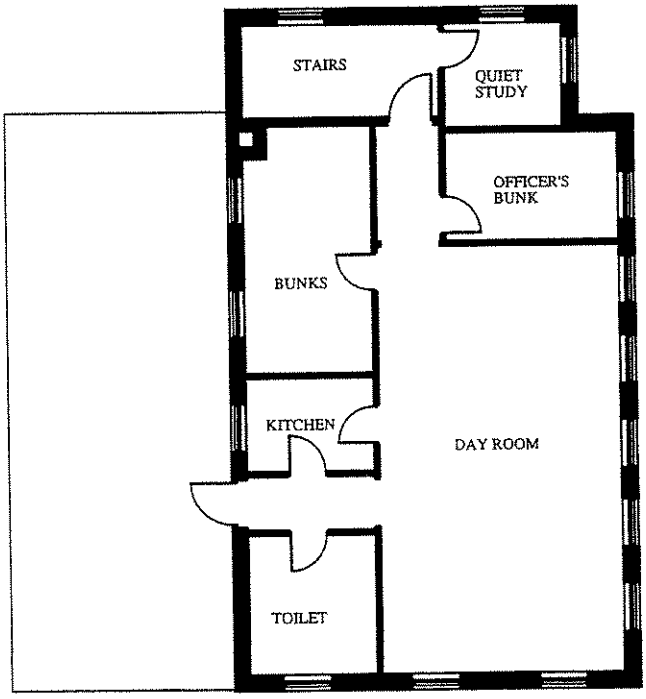
Officer's Bunk is an office and single bunk.

The Study Room is used for EMS, training, quiet study, training supplies.

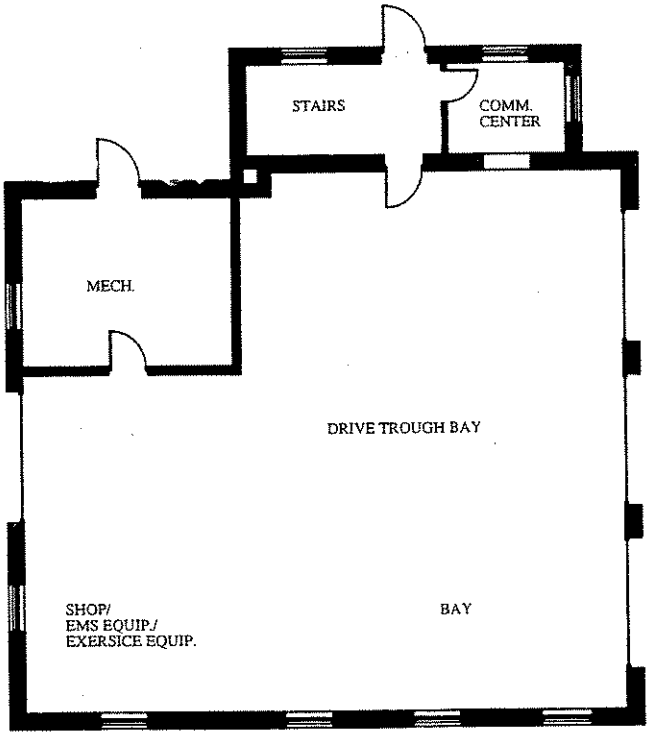
The Kitchen appliances include gas stove, refrigerator, toaster, microwave and coffee maker.

Bath/Shower Room include shower, sink and toilet.

Toilet room is used as a storage.



SECOND FLOOR



FIRST FLOOR

District #1 Fire Station - Central Acton

Mechanical Systems

The following is a description of the buildings existing Mechanical Systems with their corresponding recommended upgrades

Heating Systems (Existing)

The facility is heated with a natural gas fired hot water boiler. The boiler is located in the first floor Mechanical Room. There are two circulating pumps, one for each heating zones. Heating hot water is distributed to terminal heating equipment (finned radiation and cast iron radiators) located throughout the facility.

The heating system appears to have been converted from steam to hot water. The boiler is Weil McLain, installed in 1985, with a power gas conversion burner having a maximum fire ring rate 360,000 BTUH.

Wall mounted radiation (2 tier steel finned pipe) provides heat for the Apparatus Bay.

A combustion air fan has been installed in the Mechanical Room.

Heating Systems (Recommendation)

Isolate the heating hot water boiler and the domestic water heater space from the back-up generator. Upgrade the combustion air system associated with these fuel burning appliances.

The existing boiler, if maintained accordingly, should function as intended for another 10-15 yrs. If a substantial renovation project (including a building addition(s)) is considered, a larger capacity boiler would be required.

AC Systems (Existing)

There are three window mounted air conditioning units...a unit for the Day Room, the "large" Bunk Room, and the Officer's Bunk.

AC Systems (Recommendation)

Provide a central air conditioning system for the entire second floor.

The second floor system could be served by a single, curb mounted packaged machine located on the flat roof (on the back-side) of the facility. Alternately, a "split" system could be utilized where the condensing unit would be located as described previously and the indoor

evaporator section could be situated within the facility's attic space.

Provide a separate system for the first floor Watch Room.

Ventilation Systems (Existing)

Apparatus Bay: The area is mechanically ventilated with a propeller wall fan. The system was described as being inadequate.

Mechanical Room: A wall mounted exhaust fan is located above the back-up generator, as a means to remove excess heat during generator operation.

Ventilation Systems (Recommendation)

Apparatus Bay: Provide a "vehicle" exhaust removal system (overhead rail design, direct connect to apparatus, with roof fan - similar to Plymo-Vent or equivalent).

Kitchen Stove: Provide a hood with integral fan which discharges to the outside.

Rest/toilet Rooms: Provide ventilation as required to meet applicable codes.

Siren/Recall System (Existing)

The siren/recall system (a compressed air system consisting of two large receivers, air compressor, and associated piping) is located in Mechanical Room. The system is used on a regular basis.

Siren/Recall System (Recommendation)

A routine maintenance/service program should be adhered to in order to ensure reliable use of this system.

Plumbing (Existing)

A 2-inch water service enters the facility (through a water meter) located in Mechanical Room. Water is supplied to the heating system (as "make-up" through a backflow prevention device) and to plumbing fixtures located throughout the facility.

The facility is serviced with 1-inch gas pipe and gas meter located near the Mechanical Room. Gas is provided for

Plumbing (Recommendation)

The systems are adequate given the facility's current occupancy and usage.

the boiler, water heater, back-up generator and kitchen stove.

Plumbing fixtures include a urinal, water closets, lavatories, janitors sink, shower, stainless steel kitchen sink and a drinking fountain.

Due to the age of the plumbing fixtures it is recommended that all the plumbing fixtures be replaced and reconfigured to improve the space and storage.

Domestic HW System (Existing)

The domestic hot water for the facility is located in the Mechanical Room. The water heater has a 40 gallon storage capacity. The heater is natural gas fired with an input rating of 39,999 BTUH. The heater is relatively new (2002) and in good condition.

Domestic HW System (Recommendation)

The existing system is adequate given the quantity of plumbing fixtures. If future renovations include the addition of fixtures (showers, toilets, lavs, etc.) a heater having greater storage and input capacities would be required.

Floor Drains (Existing)

Floor drains are provided in the Apparatus Bay.

Floor Drains (Recommendations)

If the Apparatus Bay is frequently used for vehicle "wash-down" purposes, a gas, oil, and sand interceptor/separator should be considered. Systems should comply with the requirements of 310 CMR 30 and 314 CMR 5.

Septic System

The private septic system (at the rear of the building) is over 20 years old. The system probably is not Title V compliant.

Septic System

Provide a new (Title V compliant) septic system.

Fire Protection (Existing)

The facility does not have sprinkler protection.

Fire Protection (Recommendation)

Provide sprinkler protection for the entire facility. System designed, installed, tested, and maintained in accordance with NFPA.

Electrical Systems

Most of the electrical system is original 1950's wiring and equipment with some surface conduits and exposed wiring installed over the years to some newer or replacement equipment. With the interior wall made of metal lath and plaster running wiring hidden is very difficult.

The following is a description of the buildings existing Electrical Systems with their corresponding recommended upgrades

Main Underground (Existing)	Main Underground (Recommendation)
Main electric service extends underground from utility pole located on the main street in front of the fire station to an electric space located in area underneath the interior stair landing between first and second floor. A pole mounted 50 kW, single phase, 120/240V transformer serves the fire station and several adjacent buildings. The wiring extends underground via a damaged 2" conduit and a frayed service cables.	This damaged underground electrical service cable is in the process of being repaired this year. The plan is to install two new 4" underground conduits and install a replacement service cable.
Main Electrical Service(Existing)	Main Electrical (Recommendation)
Utility meter, 200A, 120/240V, 1 Phase main service disconnect switch and distribution panel are located in the electric space located in area underneath the interior stair landing between first and second floor. In addition the main normal electric service the manual and automatic transfer switch of the emergency generator is installed in this space.. This electric space does not meet the current working clearances required by the latest Electric Code	The existing 120/240V, 200A main electrical service should be replaced with a new 208/120V, 3 Phase, 4 Wire, 200A service.

Electrical Distribution (Existing)

Electrical distribution panels are manufactured by Kinney and are original 1950's construction.

In addition to the main electrical distribution equipment under the stairs, a number of flush mounted distribution panels are installed throughout the building. Two distribution panels in the apparatus bay and one 100A, 20 pole distribution panel on the second floor corridor.

Electrical Distribution (Recommendation)

The entire existing 120/240V distribution system should be replaced with a new 208/120V, 3 Phase, 4 Wire system.

TVSS surge protection should be provided for the 208/120V electrical service.

Emergency Power (Existing)

Back-up power is provided by 15 kW, 120/240V, 1 Phase, gas generator located in mechanical room. The generator is manufactured by Katolight and does not appear to have adequate ventilation and is poor condition.

The automatic and manual transfer switches are located in electric space under the stairs. This equipment does not have adequate working clearances.

Emergency Power (Recommendation)

The existing 120/240V, 1 Phase 15kW gas generator should be replaced with a new 50kW, 208/120V, 3 Phase, 4 Wire diesel generator.

It is recommended that the diesel generator be installed outdoor in the parking lot in a weather proof sound attenuated enclosure. The skit mounted tank should have a minimum of 72 hour supply. The diesel generator is recommended since on site fuel is more reliable than the gas supply that may have a disruption.

Building Wiring (Existing)

Wiring in the building consists primarily of an original wiring with some surface conduit and exposed wiring installed over time to motorize door openers and to specialized apparatus.

Building Wiring (Recommendation)

The entire electrical wiring system throughout the building should be replaced. It would be recommended that surface mounted raceways similar to Wiremold with separate 120V and telephone / data wiring be provided throughout the facility.

Exterior Lighting (Existing)

Exterior lighting includes yard type lights mounted on utility poles at both ends of the driveway.

Lighting at the exterior of the building includes quartz, flood lights located high on the building as (2) 2 lamp holders, one on each side of the apparatus bay doors.

Decorative lanterns are located at the exterior between three front doors and side doors.

The exterior fire escape has (1) single utility style incandescent lamp holder.

Exterior Lighting (Recommendation)

Exterior lighting should be replaced with new energy efficient fixtures that are decorative historic reproductions and meet the Town's exterior lighting zoning requirements.

The lighting of the exit doors must be coordinated with the emergency lighting requirements for exit door discharge.

Interior Lighting 1st Flr (Existing)

Apparatus bay lighting includes surface, fluorescent fixtures installed as retrofit as part of the energy conservation work in the early 90's. These 8 ft. fixtures include (2) single pin T-8 lamps with electronic ballasts. Fixtures are installed in an orientation and location that appears to provide adequate lighting.

Small fixtures locations have been provided with service drum style fixtures with (2) 9 watt or 13 watt compact fluorescent lamps. These fixtures provide minimal light level and have been unsatisfactory over time.

Interior Lighting 1st Flr (Recommendation)

As part of the complete renovation of the Fire Station it is recommended to replace all the light fixtures with high quality energy efficient fixtures.

Occupancy sensors shall be provided for all areas to shut lights when not needed.

First floor watch room / dispatch room should have dimmable fluorescent light fixtures.

Interior Lighting 2nd Flr (Existing)

Second level lighting includes retrofitted fixtures, original fixtures which have been provided with electronic ballasts and T-8

Interior Lighting 2nd Flr (Recommendation)

Some interior lighting on the second floor is going to be replaced with energy saving fixtures in accordance with NStar

lamps as part of an energy conservation program in early 90's. Existing 8 ft. fixtures with white steel baffles have been retrofit with electronic ballasts and 96 in T-8 lamps. Some of the fixtures' lenses are missing.

Day Room ligthing are surface mounted, fluorescent wraparound type fixtures and appear to have been retrofit with T-8 lamps

Bunk Rooms lighting includes the older style fluorescent classroom fixtures with white blade baffles which have been retrofit with electronic ballasts and T-8 lamps. Additional lighting is provided by small incandescent light fixtures.

Kitchen lighting includes a wide 4-lamp surface wraparound fixture and a narrow 2-lamp surface wraparound above the sink.

Toilet room lighting include original wall mounted. incandescent fixture with chain pull with (2) surface, ceiling mounted drum fixtures with compact fluorescent lamps.

Emergency Lighting (Existing)

Emergency lighting in the building consists of wall mounted battery units with 2 or 1 heads in the apparatus bay, mechanical room, stairs and day room.

No emergency lighting provided in toilet room and shower/bathroom or at the exterior of each exit doors and along the path of discharge as required by NFPA program.

As part of the complete renovation of the Fire Station it is recommended to replace all the light fixtures with a high quality energy efficient fixture.

Occupancy sensors shall be provided for all areas to shut lights when not needed.

The day room and bunk rooms should have dimmable fluorescent light fixtures.

Emergency Lighting (Recommendation)

Selected interior light fixture and exterior light fixture along the path of egress and discharge shall have an integral self testing battery unit in accordance with NFPA 101 and NFPA 111 requirements.

101.	Exit signs shall have LED lamps and self testing battery unit
Exit signs are very old and not lit.	
Devices (Existing)	Devices (Recommendation)
Limited number of 120V receptacles provided throughout the facility. Large number of extension cords are required.	Additional receptacles should be provided throughout the building.
Receptacles located above the kitchen counter top are not GFI type.	Kitchen counter outlets should be replaced with GFI type receptacles.
Receptacles located in the Apparatus Bay are not GFI / weatherproof type.	Outlets should be replaced with GFI/WP type. Retractable cord reel type receptacles around the trucks is recommended.
Telephone / Data (Existing)	Telephone / Data (Recommendation)
Existing phone service wires were recently replaced with new fiber optic wires coming underground to the building in 4" PVC pipe.	Complete replacement of communication system should be provided throughout the building. CAT 5E wiring and pathways should be provided for each desk and table area throughout the building.
Existing building telephone and data wiring is mostly older. Much of the communication wiring is exposed, tie wrapped to conduits and piping and run through rated assemblies without fire rated insulation.	
Cable TV outlet located in day room.	
Lighting Protection (Existing)	Lighting Protection (Recommendation)
Lighting protection system provided for the building appears to be original construction which has been lifted and reinstalled with relatively new roof. The lightning protection system includes 12"	Replacement of the system is recommended given the age of the system and modifications that occurred over time. System should be replaced with a new system of roof perimeter

points copper with straps and bladed down leads around the building. Some of the equipment connections fittings are rusted and corroded.

Fire Alarm System (Existing)

Existing building fire alarm system consists of minimal hard wired smoke detection at the interior stairs. A surface mounted fire alarm street box (not connected to interior fire alarm system devices) and red beacon are located at the front exterior of the building.

The facility has no cental fire alarm system, therefore no speaker/strobe units, no pull stations within the building, and no smoke detectors at the sleeping quarters as required by NFPA 72 and NFPA 101 are provided.

Security System (Existing)

The building has no security system.

Paging System (Existing)

The building has a limited paging system and is not connected to the telephone system.

Traffic Warning Light (Existing)

The facility does not have a traffic warning light at the street.

mounted points, down leads and grounding per NFPA 780 and UL requirements.

Fire Alarm System (Recommendation)

A new fully addressable Fire Alarm Detection and Alarm System with voice controls shall be provided in accordance with NFPA 72.

Security System (Recommendation)

It is recommended that a complete security system be provided including card readers at the doors, motion detectors and cameras (doors and exterior).

Paging System (Recommendation)

It is recommended that a complete interior and exterior paging system connected to the telephone system be provided.

Traffic Warning Light (Recommendation)

Provide a traffic warning light at the street.

Architectural Work Scope

The following Architectural work scope items are required to implement the mechanical and electrical items identified above:

Kitchen (Existing)

The kitchen cabinet and layout is original 1950's residential quality and has not held up to the constant use. All the appliances and sink should be replaced.

Kitchen (Recommendation)

It is recommended to reconfigure the kitchen, improve storage space and install commercial grade appliances. Ventilation is required over the stove.

Bathrooms / Shower (Existing)

The bathroom / shower rooms layout is original 1950's. The material and condition of the plumbing fixtures make it very difficult to clean. The toilet room is currently used as a storage room.

Bathrooms / Shower (Recommendation)

It is recommended to reconfigure the two bathrooms, install new fixtures and improve storage space in the area.

Windows (Existing)

Double hung widows are original. All the windows have been retrofitted with aluminum combination storm / screen units that take away from the historic character of the building.

Windows (Recommendation)

Replace the old windows with energy efficient double hung windows that match the historic character of the building.

Exterior Doors (Existing)

Exterior doors are show their age with rot and swelling along the bottom edge.

Exterior Doors (Recommendation)

Replace all the exterior doors with new energy efficient decorative historic reproductions.

Overhead Doors (Existing)

Overhead doors are un-insulated wood style and rail type with glazed panels at eye level. The rear overhead door is a recently replaced insulated metal door.

Overhead Doors (Recommendation)

Replace all the overhead doors with new energy efficient decorative historic reproductions.

Interior Painting/Repair (Existing)	Interior Repair (Recommendation)
Interior ceilings and walls have some plaster damage from previous roof leaks.	Paint and repair all interior walls and ceilings. Replace and upgrade all flooring. Test for asbestos in interior materials.
Apparatus Bay Floor (Existing)	Apparatus Bay Floor (Recommendation)
Cracks in Apparatus Bay Floor.	Repair cracks and epoxy paint the Apparatus Bay and Mechanical Room floors.
Exterior Painting/Repair (Existing)	Exterior Repair (Recommendation)
No known insulation in the exterior walls.	Install blown in insulation in the exterior and interior walls.
Stucco finish is in good condition with typical cracks and stains.	Repair exterior cracks and paint the entire exterior.
Lower Roof (Existing)	Lower Roof (Recommendation)
The low roof noted in previous reports to have considerable ponding of water due to poor roof drainage	Repair roof drainage system.

Cost Estimates

The estimated cost to perform the work described in this report is as follows:

LINE ITEM		QUANTITY NUMBER OF UNITS	QUANTITY UNIT MEASURE	PER UNIT COST INCLUDING SUB'S O.H. & PROFIT	TOTAL COST
MECHANICAL					
M1.	Upgrade Combustion Air System	1	LS	$2,000.00	$2,000.00
M2.	New Larger Cast Iron Boiler	1	LS	$20,000.00	$20,000.00
M3.	Central air conditioning system (5 to 7.5 Tons), including ductwork and insulation.	1	LS	$26,500.00	$26,500.00
M4.	Independent AC System Watch Room	1	LS	$3,500.00	$3,500.00
M5.	Vehicle Exhaust System	3	EA	$13,500.00	$40,500.00
M6.	Kitchen Hood Exhaust System	1	EA	$1,000.00	$1,000.00
M7.	Bathroom Exhaust Fans, Grilles, and Ductwork	1	LS	$2,000.00	$2,000.00
SUBTOTAL - MECHANICAL					$95,500.00
PLUMBING					
P1.	Replace Toilets	4	EA	$1,050.00	$4,200.00
P2.	Replace Showers	2	EA	$2,500.00	$5,000.00
P3.	Replace Bathroom Lavatories	4	EA	$650.00	$2,600.00
P4.	Replace Kitchen Sink / Garbage Disposal	1	EA	$1,250.00	$1,250.00
P5.	Larger Domestic Water Heater	1	LS	$2,500.00	$2,500.00
P6.	Interceptor/Separator & Floor Drains (Apparatus Bay)	1	LS	$20,500.00	$20,500.00
P7.	Septic System (Title V)	1	LS	$20,500.00	$20,500.00
SUBTOTAL - PLUMBING					$56,550.00
FIRE PROTECTION					
FP1.	Sprinkler Systems (including attic area)	1	LS	$20,000.00	$20,000.00
SUBTOTAL - FIRE PROTECTION					$20,000.00

	LINE ITEM	QUANTITY NUMBER OF UNITS	QUANTITY UNIT MEASURE	PER UNIT COST INCLUDING SUB'S O.H. & PROFIT	TOTAL COST
ELECTRICAL					
E1.	Main Electrical Service Upgrade	1	LS	$5,000.00	$5,000.00
E2.	Replace Electrical Distribution Panels	5	EA	$4,500.00	$22,500.00
E3.	100% Emergency Generator (50kW) / ATS	1	LS	$35,000.00	$35,000.00
E4.	Wiring / Wiremold	214	LF	$6.50	$1,391.00
E5.	Exterior Lighting - Building Historic	16	EA	$350.00	$5,600.00
E6.	Exterior Lighting - Pole Historic	2	EA	$3,500.00	$7,000.00
E7.	Interior Lighting	42	EA	$250.00	$10,500.00
E8.	Emergency Lighting	16	EA	$125.00	$2,000.00
E9.	Devices	62	EA	$175.00	$10,850.00
E10.	Telephone / Data / Cable TV	18	EA	$175.00	$3,150.00
E11.	Lightning Protection / Grounding System	1	LS	$8,500.00	$8,500.00
E12.	Fire Alarm System	1	LS	$12,500.00	$12,500.00
E13.	Security System with two Card Readers	1	LS	$6,500.00	$6,500.00
E14.	Security System Camera	5	EA	$1,500.00	$7,500.00
E15.	Paging System Speakers and Amplifier	20	EA	$150.00	$3,000.00
E16.	Traffic Warning	1	LS	$7,000.00	$7,000.00
E17.	Remote Dispatch Upgrade	1	LS	$50,000.00	$50,000.00
SUBTOTAL - ELECTRICAL					$197,991.00

LINE ITEM		QUANTITY NUMBER OF UNITS	QUANTITY UNIT MEASURE	PER UNIT COST INCLUDING SUB'S O.H. & PROFIT	TOTAL COST
ARCHITECTURAL					
A1.	Renovate Kitchen	1	LS	$18,500.00	$18,500.00
A2.	Renovate Bathroom / Shower / Toilet Room increase storage	1	LS	$10,000.00	$10,000.00
A3.	Replace Windows Historic	24	EA	$850.00	$20,400.00
A4.	Replace Exterior Doors Historic	2	EA	$1,250.00	$2,500.00
A5.	Replace Overhead Doors Historic	4	EA	$4,500.00	$18,000.00
A6.	Test For Asbestos	1	LS	$5,000.00	$5,000.00
A7.	General Interior Painting / Repairs	1	LS	$25,000.00	$25,000.00
A8.	Interior Flooring	1,572	SQFT	$8.00	$12,576.00
A9.	Apparatus Bay / Mechanical Room Floor Repair	2,338	SQFT	$3.50	$8,183.00
A10.	General Exterior Painting / Repairs	1	LS	$15,000.00	$15,000.00
A11.	Lower Roof Drainage	1	LS	$6,500.00	$6,500.00
SUBTOTAL - ARCHITECTURAL					$141,659.00
SUBTOTAL - SUBCONTRACTORS					$511,700.00
GENERAL REQUIREMENTS			10%	SUBTOTAL	$51,170
CONTRACTORS FEE			10%	SUBTOTAL	$56,287
DESIGN FEE			12%	SUBTOTAL	$74,299
CONTINGENCY			10%	SUBTOTAL	$69,346
TOTAL ESTIMATED CONSTRUCTION COST (AUGUST 2004)					$762,801
Note:	The above estimated construction costs reflect current August, 2004 pricing and are based upon conceptual square foot values and sizing without the benefit of formal design. Currently, it is recommended that a normal escalation factor of 12.5% (exclusive of material spikes) be applied to the Total Current Estimated Cost to reflect construction in mid 2007.				
TOTAL ESTIMATED CONSTRUCTION COST (JUNE 2007)					$858,152

The above 2004 costs is an order of magnitude since a detail design has not been done.